

# THE FLORIDA KEYS CARRYING CAPACITY STUDY

Volume 2

May 2002

## A Progress Report

### STUDY GOAL

**The purpose of the Florida Keys Carrying Capacity Study is “to determine the ability of the Florida Keys ecosystem to withstand all impacts of additional land development activities.”**

**In 1996, the Florida Administration Commission and the governor called for the preparation of a “carrying capacity analysis” of the Florida Keys in response to the hearing officer’s report on the Monroe County Comprehensive Plan. In a cooperative effort, the U.S. Army Corps of Engineers, the Florida Department of Community Affairs and Monroe County are conducting the Florida Keys Carrying Capacity Study to look at the impact of additional land development activities on the Florida Keys.**

The Florida Keys Carrying Capacity Study (FKCCS) Team has made considerable progress since first tasked with this undertaking. Previous studies from both public and private sectors have been gathered and the following areas have been extensively researched: natural resources, wastewater, stormwater, water quality, ecosystems and species of concern, human infrastructure, transportation and hurricane evacuation, social environment, socio-economics, sustainable tourism, quality of life, community character, rate of growth and land use regulations.

During the course of the project, citizens throughout the Keys have had opportunities to comment and contribute to the FKCCS. Three series of public meetings, in July 2000, March 2001 and April 2002, were held throughout the Keys. In addition, a FKCCS Web site was established to share information, as well as offer additional opportunity for public comment.

### CCIAM Created

The Carrying Capacity Impact Assessment Model (CCIAM) has been created with a graphic user interface that utilizes environmental thresholds and tolerance limits to evaluate the impact of land development activities on the ecosystem, including water quality, threatened and endangered species, and habitats. The CCIAM has been designed to illustrate the effects of different scenarios on the economy, quality of life and human infrastructure issues such as potable water and hurricane evacuation.

Using the best available data and science, the CCIAM and its supplemental reports are assessment tools to help enable local decision makers support comprehensive plan amendments and rate of growth adjustments. The model shows how a change in one area affects the other study areas, but does not make recommendations or decisions regarding land use.

### Scenarios Developed

During 2001, the Study Team held a series of scenario development workshops for

Monroe County and local municipality planners, which were open to the public, to reach consensus and solidify scenarios to preliminarily test the CCIAM. Scenarios are primarily defined by changes in land use. Planning time frames, land for future development, transportation, environmental interventions and best management practices are components that have been considered in the formulation of these scenarios.

In October 2001, the Study Team held a public workshop to review the results of the first preliminary runs of several proposed scenarios for the CCIAM. Proposed scenarios were thoroughly discussed and modified, as required, for analysis in the model. The first scenario used to preliminarily test the CCIAM contained conditions as they currently exist in the Keys. The second scenario contained “Smart Growth” parameters that target environmentally sensitive areas for acquisition, conservation and focus future development on “infill” lots that are already 50 percent developed. Complete implementation of the county Stormwater Management Plan and the Sanitary Wastewater Master Plan were also a parameter for this scenario.

### Science Evaluated

The independent and highly regarded National Academy of Science (NAS) received a draft preliminary report in November 2001 and has evaluated the draft CCIAM. In March 2002, NAS provided a review of the draft preliminary CCIAM. “This independent review offered critical commentary in order to assist the sponsors and contractors in making final adjustments to their report and the CCIAM,” according to the executive summary of the NAS review. It concluded that “the current knowledge base in the environmental and social sciences is simply not yet adequate to enable anyone to determine the ability of the Florida Keys ecosystem to withstand all impacts of additional land development activities.”

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**T**he Florida Keys Carrying Capacity Study Team is comprised of leading professionals in their fields ranging from marine biology to social economics. Ann Lazar, planning consultant for the Florida Department of Community Affairs (DCA), Debbie Peterson, a coastal engineer with the U.S. Army Corps of Engineers (USACE), and Ricardo Calvo, Ph.D., of URS Corporation, the Study Team's technical contractor, manage the project.

#### **For More Information**

For more information on the Florida Keys Carrying Capacity Study, please contact Ann Lazar (DCA) at 850-410-1564 or Debbie Peterson (USACE) at 904-232-2204, or visit the FKCCS Web site at [www.saj.usace.army.mil/projects](http://www.saj.usace.army.mil/projects) and double click on FKCCS on the left side of the screen.

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According to Jim Duck, chief of the Planning Division of the USACE in Jacksonville, "The National Academy did what we asked them to do, which was to provide a critical review of the CCIAM. They told us what was good about the model, what can be improved and what was beyond our reach with the present state of science and data. Out of the six modules of the CCIAM, according to NAS, one is pretty close to final (terrestrial), four could be brought to completion with some revisions (socio-economic, fiscal, infrastructure and water) and we are looking closely at the marine module to see how the Academy's concerns can be best addressed."

The Study Team values the input from NAS and is currently addressing issues and concerns raised in their review. One of the responses to overarching comments and concerns of the NAS has resulted in the Carrying Capacity Analysis Model (CCAM) being renamed and referred to as the Carrying Capacity Impact Assessment Model (CCIAM).

The Study Team has concluded they do not have the science or technology to assess what impact land development activities will have on the marine environment and will discuss the data at length in the report. Additionally, the Study Team has revised the socio-economic module and has input 2000 Census data.

The Study Team was tasked with creating the CCIAM using existing data. All of the data utilized in the FKCCS went through a peer review and a quality control process. Data used in the FKCCS has been successfully used in other studies.

The Study Team also anticipates receiving comments from other technical experts that are reviewing the project. The Study Team continues to support the CCIAM as a viable tool for the planners of Monroe County.

In addition, a separate component of the CCIAM is the Routine Planning Tool (RPT) that will be designed for everyday use. The RPT will use the same data as the complex CCIAM, but will be an assessment tool for routine planning decisions rather than long-term growth management adjustments such as comprehensive plan amendments.

#### **Future Plans**

In order to maintain the beauty of our islands and our quality of life, we must know just how much development the Florida Keys can sustain. After the FKCCS is complete the CCIAM will be available to local governments so that additional scenarios can be tested. This will assist communities in selecting which future is right for them, while ensuring the range of available choices are within the limits of the Keys' carrying capacity.

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